



Product designation

Power contactor

Product type designation

BGF09

**Contact characteristics**

|                                                                                |                                                    |        |
|--------------------------------------------------------------------------------|----------------------------------------------------|--------|
| Number of poles                                                                | Nr.                                                | 4      |
| Rated insulation voltage $U_i$ IEC/EN                                          | V                                                  | 690    |
| Rated impulse withstand voltage $U_{imp}$                                      | kV                                                 | 6      |
| Operational frequency                                                          | min                                                | Hz 25  |
|                                                                                | max                                                | Hz 400 |
| IEC Conventional free air thermal current $I_{th}$                             | A                                                  | 20     |
| Operational current $I_e$                                                      | AC-1 ( $\leq 40^\circ\text{C}$ )                   | A 20   |
|                                                                                | AC-1 ( $\leq 55^\circ\text{C}$ )                   | A 18   |
|                                                                                | AC-1 ( $\leq 70^\circ\text{C}$ )                   | A 15   |
|                                                                                | AC-3 ( $\leq 440\text{V } \leq 55^\circ\text{C}$ ) | A 9    |
|                                                                                | AC-4 (400V)                                        | A 4    |
| Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )                     | 230V                                               | kW 8   |
|                                                                                | 400V                                               | kW 14  |
|                                                                                | 500V                                               | kW 16  |
|                                                                                | 690V                                               | kW 22  |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series | $\leq 24\text{V}$                                  | A 12   |
|                                                                                | 48V                                                | A 10   |
|                                                                                | 75V                                                | A 4    |
|                                                                                | 110V                                               | A 3    |
|                                                                                | 220V                                               | A –    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 2 poles in series | $\leq 24\text{V}$                                  | A 15   |
|                                                                                | 48V                                                | A 14   |
|                                                                                | 75V                                                | A 9    |
|                                                                                | 110V                                               | A 8    |
|                                                                                | 220V                                               | A –    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series | $\leq 24\text{V}$                                  | A 16   |
|                                                                                | 48V                                                | A 16   |
|                                                                                | 75V                                                | A 10   |
|                                                                                | 110V                                               | A 10   |
|                                                                                | 220V                                               | A 2    |
| IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series | $\leq 24\text{V}$                                  | A 16   |
|                                                                                | 48V                                                | A 16   |
|                                                                                | 75V                                                | A 10   |
|                                                                                | 110V                                               | A 10   |
|                                                                                | 220V                                               | A 2    |

|                                                                                     |                   |                 |      |
|-------------------------------------------------------------------------------------|-------------------|-----------------|------|
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 1 poles in series |                   |                 |      |
|                                                                                     | $\leq 24\text{V}$ | A               | 7    |
|                                                                                     | 48V               | A               | 6    |
|                                                                                     | 75V               | A               | 2    |
|                                                                                     | 110V              | A               | 1    |
|                                                                                     | 220V              | A               | –    |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 2 poles in series |                   |                 |      |
|                                                                                     | $\leq 24\text{V}$ | A               | 8    |
|                                                                                     | 48V               | A               | 8    |
|                                                                                     | 75V               | A               | 5    |
|                                                                                     | 110V              | A               | 4    |
|                                                                                     | 220V              | A               | –    |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 3 poles in series |                   |                 |      |
|                                                                                     | $\leq 24\text{V}$ | A               | 10   |
|                                                                                     | 48V               | A               | 10   |
|                                                                                     | 75V               | A               | 6    |
|                                                                                     | 110V              | A               | 5    |
|                                                                                     | 220V              | A               | 0,8  |
| IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 4 poles in series |                   |                 |      |
|                                                                                     | $\leq 24\text{V}$ | A               | 10   |
|                                                                                     | 48V               | A               | 10   |
|                                                                                     | 75V               | A               | 6    |
|                                                                                     | 110V              | A               | 5    |
|                                                                                     | 220V              | A               | 0,8  |
| Short-time allowable current for 10s (IEC/EN60947-1)                                |                   | A               | 96   |
| Protection fuse                                                                     |                   |                 |      |
|                                                                                     | gG (IEC)          | A               | 20   |
|                                                                                     | aM (IEC)          | A               | 10   |
| Making capacity (RMS value)                                                         |                   | A               | 92   |
| Breaking capacity at voltage                                                        |                   |                 |      |
|                                                                                     | 440V              | A               | 72   |
|                                                                                     | 500V              | A               | 72   |
|                                                                                     | 690V              | A               | 72   |
| Resistance per pole (average value)                                                 |                   | m $\Omega$      | 10   |
| Power dissipation per pole (average value)                                          |                   |                 |      |
|                                                                                     | $I_{th}$          | W               | 4    |
|                                                                                     | AC-3              | W               | 0.81 |
| Tightening torque for terminals                                                     |                   |                 |      |
|                                                                                     | min               | Nm              | 0.8  |
|                                                                                     | max               | Nm              | 1    |
|                                                                                     | min               | Ibin            | 9    |
|                                                                                     | max               | Ibin            | 9    |
| Tightening torque for coil terminal                                                 |                   |                 |      |
|                                                                                     | min               | Nm              | 0.8  |
|                                                                                     | max               | Nm              | 1    |
|                                                                                     | min               | Ibin            | 9    |
|                                                                                     | max               | Ibin            | 9    |
| Max number of wires simultaneously connectable                                      |                   | Nr.             | 2    |
| Conductor section                                                                   |                   |                 |      |
| AWG/Kcmil                                                                           |                   |                 |      |
|                                                                                     | max               |                 | 12   |
| Flexible w/o lug conductor section                                                  |                   |                 |      |
|                                                                                     | min               | mm <sup>2</sup> | 0.75 |

|                                                     |                            |                 |                          |
|-----------------------------------------------------|----------------------------|-----------------|--------------------------|
|                                                     | max                        | mm <sup>2</sup> | 2.5                      |
| Flexible c/w lug conductor section                  | min                        | mm <sup>2</sup> | 1.5                      |
|                                                     | max                        | mm <sup>2</sup> | 2.5                      |
| Flexible with insulated spade lug conductor section | min                        | mm <sup>2</sup> | 1.5                      |
|                                                     | max                        | mm <sup>2</sup> | 2.5                      |
| Power terminal protection according to IEC/EN 60529 |                            |                 | IP20 when properly wired |
| <b>Mechanical features</b>                          |                            |                 |                          |
| Operating position                                  | normal allowable           |                 | Vertical plan ±30°       |
| Fixing                                              |                            |                 | Screw / DIN rail 35mm    |
| Weight                                              |                            | g               | 210                      |
| <b>Auxiliary contact characteristics</b>            |                            |                 |                          |
| Thermal current I <sub>th</sub>                     |                            | A               | 10                       |
| IEC/EN 60947-5-1 designation                        |                            |                 | Q600                     |
| <b>Operations</b>                                   |                            |                 |                          |
| Mechanical life                                     |                            | cycles          | 20000000                 |
| Electrical life                                     |                            | cycles          | 500000                   |
| <b>Safety related data</b>                          |                            |                 |                          |
| Performance level B10d according to EN/ISO 13489-1  | rated load mechanical load | cycles          | 500000                   |
|                                                     |                            | cycles          | 20000000                 |
| EMC compatibility                                   |                            |                 | yes                      |
| <b>DC coil operating</b>                            |                            |                 |                          |
| DC rated control voltage                            |                            | V               | 60                       |
| DC operating voltage                                |                            |                 |                          |
| pick-up                                             | min                        | %Us             | 75                       |
|                                                     | max                        | %Us             | 115                      |
| drop-out                                            | min                        | %Us             | 10                       |
|                                                     | max                        | %Us             | 25                       |
| Average coil consumption ≤20°C                      | in-rush holding            | W               | 3.2                      |
|                                                     |                            | W               | 3.2                      |
| <b>Max cycles frequency</b>                         |                            |                 |                          |
| Mechanical operation                                |                            | cycles/h        | 3600                     |
| <b>Operating times</b>                              |                            |                 |                          |
| Average time for U <sub>s</sub> control in AC       | Closing NO                 | min             | ms 12                    |
|                                                     |                            | max             | ms 21                    |
|                                                     | Opening NO                 | min             | ms 9                     |
|                                                     |                            | max             | ms 18                    |
|                                                     | Closing NC                 | min             | ms 17                    |
|                                                     |                            | max             | ms 26                    |
|                                                     | Opening NC                 |                 |                          |

|       |            |     |    |    |
|-------|------------|-----|----|----|
|       |            | min | ms | 7  |
|       |            | max | ms | 17 |
| in DC |            |     |    |    |
|       | Closing NO |     |    |    |
|       |            | min | ms | 18 |
|       |            | max | ms | 25 |
|       | Opening NO |     |    |    |
|       |            | min | ms | 2  |
|       |            | max | ms | 3  |
|       | Closing NC |     |    |    |
|       |            | min | ms | 3  |
|       |            | max | ms | 5  |
|       | Opening NC |     |    |    |
|       |            | min | ms | 11 |
|       |            | max | ms | 17 |

#### UL technical data

|                                                  |          |    |     |
|--------------------------------------------------|----------|----|-----|
| Rated operational voltage AC (UL)                |          | V  | 600 |
| Full-load current (FLA) for three-phase AC motor |          |    |     |
|                                                  | at 480V  | A  | 7.6 |
|                                                  | at 600V  | A  | 6.1 |
| Yielded mechanical performance                   |          |    |     |
| for single-phase AC motor                        |          |    |     |
|                                                  | 110/120V | HP | 0.5 |
|                                                  | 230V     | HP | 1.5 |
| for three-phase AC motor                         |          |    |     |
|                                                  | 200/208V | HP | 2   |
|                                                  | 220/230V | HP | 3   |
|                                                  | 460/480V | HP | 5   |
|                                                  | 575/600V | HP | 5   |

#### General USE

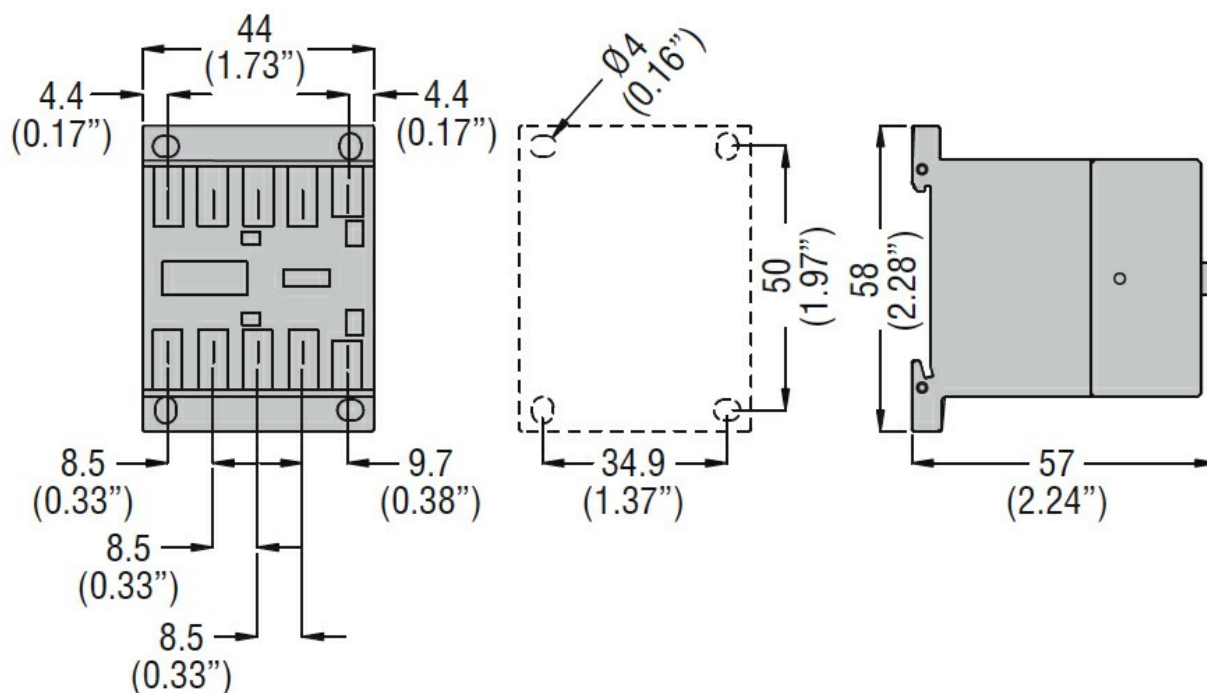
|                                     |                       |    |     |
|-------------------------------------|-----------------------|----|-----|
| Contactor                           | AC current            | A  | 20  |
| Short-circuit protection fuse, 600V |                       |    |     |
| High fault                          | Short circuit current | kA | 100 |
|                                     | Fuse rating           | A  | 30  |
|                                     | Fuse class            |    | J   |
| Standard fault                      | Short circuit current | kA | 5   |
|                                     | Fuse rating           | A  | 30  |

#### Ambient conditions

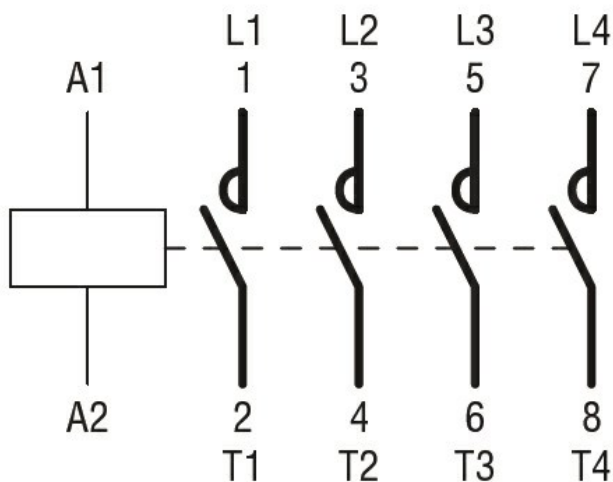
|             |                       |                     |     |      |
|-------------|-----------------------|---------------------|-----|------|
| Temperature | Operating temperature | min                 | °C  | -50  |
|             |                       | max                 | °C  | +70  |
|             |                       | Storage temperature |     |      |
|             |                       | min                 | °C  | -60  |
|             | max                   | °C                  | +80 |      |
|             | Max altitude          |                     | m   | 3000 |

#### Resistance & Protection

|                  |   |
|------------------|---|
| Pollution degree | 3 |
| Dimensions       |   |



#### Wiring diagrams



#### Certifications and compliance

##### Compliance

CSA C22.2 n° 60947-1  
CSA C22.2 n° 60947-4-1  
IEC/EN 60947-1  
IEC/EN 60947-4-1  
UL 60947-1  
UL 60947-4-1

##### Certificates

CCC  
cULus  
EAC

#### ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching